

CN6120, CN6134, CN4620, CN4634 SERIES

NON-SPRING RETURN DIRECT-COUPLED DAMPER ACTUATORS
FOR FLOATING / 2-POSITION CONTROL

PRODUCT DATA



GENERAL

These direct-coupled damper actuators provide two-position and floating control for:

- air dampers,
- VAV units,
- air handlers,
- ventilation flaps,
- louvers, and
- reliable control for air damper applications with up to 4.6 m² / 50 sq.ft. (20 Nm / 177 lb-in) or 7.8 m² / 85 sq. ft. (34 Nm / 300 lb-in) (seal-less dampers; air friction-dependent).

FEATURES

- Self-centering shaft adapter
- Access cover to facilitate connectivity
- Service/off for safe & easy servicing
- Rotation direction selectable by switch
- Declutch for manual adjustment
- Mechanical end limits
- Field-installable auxiliary switches
- Mountable in any orientation (no IP54 if upside down)
- Mechanical position indicator
- CE and UL certified

SPECIFICATIONS

Supply voltage

CN6120/CN6134	24 Vac/dc ±15%, 50/60 Hz
CN4620/CN4634	230 Vac ±15%, 50/60 Hz

Nominal voltage

CN6120/CN6134	24 Vac/dc, 50/60 Hz
CN4620/CN4634	230 Vac, 50/60 Hz

All values stated hereinafter apply to operation under nominal voltage conditions.

Power consumption

CN6120	8 VA / 4 W
CN4620	10 VA / 4 W
CN6134	10 VA / 5 W
CN4634	13 VA / 5 W

Ambient limits

Ambient operating limits	-20...+60 °C (-5...+140 °F)
Ambient storage limits	-40...+80 °C (-40...+175 °F)
Relative humidity	5...95%, non-condensing

Safety

Protection standard	IP54 as per EN 60529 (Type 1 Enclosure)
Overvoltage category	II
Pollution degree	II
Action Type	1
Protection against electric shock class	Class II (CN46), Class III (CN61)
Electronic control software class	Class A

Lifetime

Full strokes	60000
Repositions	1.5 million

Mounting

Round damper shaft	10...27 mm (3/8...1-1/16")
Square damper shaft	10...18 mm (3/8...11/16"); 45° steps min. 22 mm (7/8")

Torque rating

CN6120 / CN4620	20 Nm (177 lb-in)
CN6134 / CN4634	34 Nm (300 lb-in)

Runtime for 90°

	95 sec (60 Hz) / 110 sec (50 Hz or DC supply)
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Rotation stroke

	Max.95°
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Dimensions

	see "Dimensions" on page 6
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Weight (without cables)

	1.35 kg (3 lbs.)
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Noise rating

	40 dBA max. at 1 m
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Certification

CN6120 / CN6134	CE& UL
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MODELS

Model #	Description
CN6120A1002	20Nm,24Vac/Vdc, Floating/2-position control, Non-Spring Return, No feedback and without aux. Switch
CN4620A1001	20Nm,230V,Floating/2-position control, Non-Spring Return, No feedback and without aux. Switch
CN6134A1003	34Nm,24Vac/Vdc, Floating/2-position control, Non-Spring Return, No feedback and without aux. Switch
CN4634A1001	34Nm,230Vac, Floating control/2-position, Non-Spring Return, No feedback and without aux. Switch
CN4620A1001S	Non-spring return, floating and two-position control, 230V AC, 20NM, self-centroled adapter
CN4634A1001S	Non-spring return, floating and two-position control, 230V AC, 34NM, self-centroled adapter
CN6120A1002S	Non-spring return, floating and two-position control, 24V AC/DC, 20NM, self-centroled adapter
CN6134A1003S	Non-spring return, floating and two-position control, 24V AC/DC, 34NM, self-centroled adapter

Product Identification System

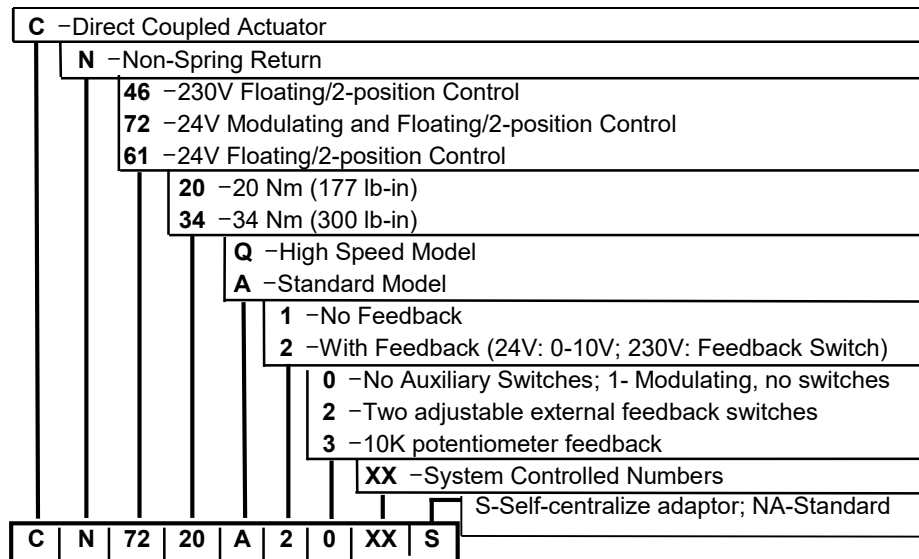
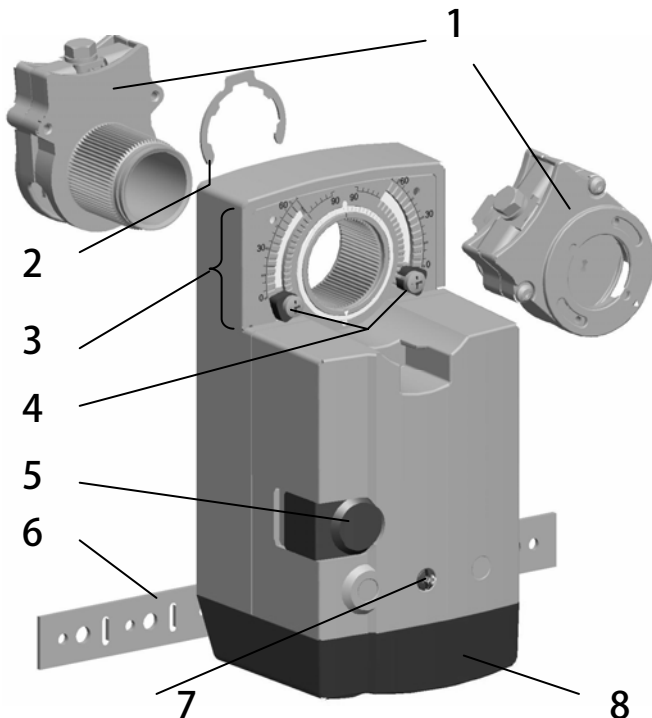


Fig. 1. Product Identification System

OPERATION / FUNCTIONS



Legend for Fig. 2:

- 1 Self-centering shaft adapter
- 2 Retainer clip
- 3 Rotational angle scales (0...90° / 90...0°)
- 4 Mechanical end limits
- 5 Declutch button
- 6 Anti-rotation bracket
- 7 Function selection switch
- 8 Access cover

Contents of Package

The delivery package includes the actuator itself, parts 1 through 8 (see Fig.2), the anti-rotation bracket screws, and installation instruction.

RUN MODES

The function selection switch (see Fig. 3) can be used to place the actuator into anyone of three different modes:

- Dir, floating/2-position control, cw run.
- Service/Off, actuator stop running.
- Rev, floating/2-position control, ccw run.

Fig. 2. Setting units and control elements



Fig. 3. Function selection switch

Power-Off Behavior

If power is removed, the actuator retains its position.

Service/Off

If the function selection switch is set to the "Service/Off" position, all rotary movement is cancelled, and all control signals are ignored, thus allowing the actuator to be safely manually operated.

Floating/2-Position Run Mode

If the function selection switch has been set to one of the two floating/2-position control settings (Dir or Rev) and the actuator is wired correspondingly (see A1 and A2) as soon as the operating power is applied, the actuator will run according to the power applied

Table 1 describes the behavior (stops, rotates CCW, or rotates CW) of the CN6120/CN6134 in relation to the control signals (switch "open" or "24Vac/dc") applied to terminals 3 and 4, the function selection switch setting, and the manner in which the actuator is wired (either for floating mode: see A1, or for 2-position mode: see A2).

Table 1. Behavior of CN6120/CN6134

Wiring	Control signal at		Function selection switch		
	term. 3	term. 4	Dir	Service/Off	Rev
Float.	open	open	stops	stops	stops
	open	24Vac/dc	CCW	stops	CW
	24Vac/dc	open	CW	stops	CCW
2-pos.	24Vac/dc	open	CW	stops	CCW
	24Vac/dc	24Vac/dc	CCW	stops	CW

Table 2 shows the same actuator behavior as Table 1, but for CN4620/CN4634 (230Vac models).

Table 2. Behavior of CN4620/CN4634

Wiring	Control signal at		Function selection switch		
	term. 3	term. 4	Dir	Service/Off	Rev
Float.	open	open	stops	stops	stops
	open	230Vac	CCW	stops	CW
	230Vac	open	CW	stops	CCW
2-pos.	230Vac	open	CW	stops	CCW
	230Vac	230Vac	CCW	stops	CW

Sleep Mode

When actuator reaches end stop or any obstacles blocking its running, it will fall into sleep mode automatically. Actuator will

periodically start up and try to resume running, which will save energy significantly through whole service life.

Position Indication

The hub adapter indicates the rotation angle position by means of the rotational angle scales (0...90° / 90...0°) provided in the actuator plate (see Fig. 4).

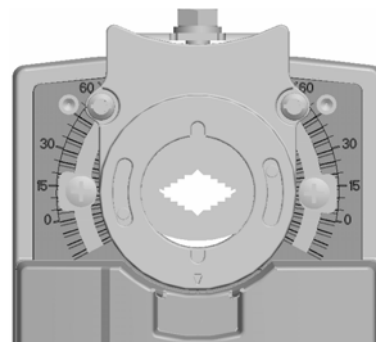


Fig. 4. Position indication

Manual Adjustment

! IMPORTANT

To prevent equipment damage, you must remove power or set the rotation direction switch to the "Service/Off" position before manual adjustment.

After removing power or setting the rotation direction switch to the "Service/Off" position, the gear train can be disengaged using the declutch button, permitting the actuator shaft to be manually rotated to any position.

Limitation of Rotation Stroke

Two adjustable mechanical endlimits (adjustable in 5° increments) are provided to limit the angle of rotation as desired (see Fig. 5).

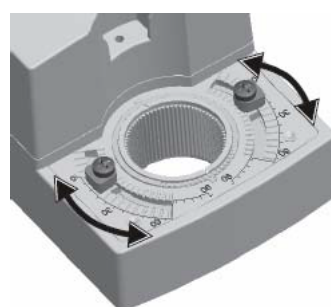


Fig. 5. Mechanical end limits

The mechanical end limits must be securely fastened in place. It is important that they properly mesh with the rotational angle scales when the screws are tightened.

INSTALLATION

These actuators are designed for single-point mounting.

! IMPORTANT

In order to prevent equipment damage, you must remove power or set the rotation direction switch to the "Service/Off" position before manual operation.

Mounting Instructions

All information and steps are included in the installation instructions supplied with the actuator.

Mounting Position

The actuators can be mounted in any position (no IP54 if mounted upside down; see Fig.6). Choose a mounting position permitting easy access to the actuator's cables and controls.

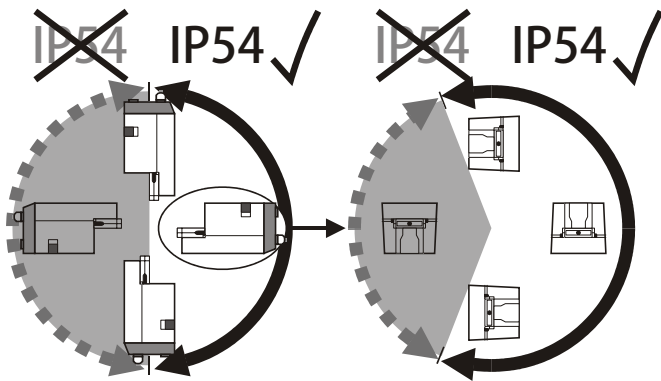


Fig. 6. Mounting for IP54

Mounting Bracket and Screws

If the actuator is to be mounted directly on a damper shaft, use the mounting bracket and screws included in the delivery package.

Self-Centering Shaft Adapter

The self-centering shaft adapter can be used for shafts having various diameters (10...27 mm [3/8...1-1/16"]) and shapes (square or round).

In the case of short shafts, the shaft adapter may be reversed and mounted on the duct side.

Stroke Limitation with Mechanical End Limits

The mechanical end limits enable the stroke to be limited from 0...90° in increments of 5°.

Wiring

Connecting to the Power Supply

In order to comply with protection class II, the power source of 24 V actuators must be reliably separated from the network power supply circuits as per DIN VDE 0106, part 101.

Access Cover

To facilitate wiring the actuator to the controller, the access cover can be detached from the actuator.

! IMPORTANT

Remove power before detaching the access cover. Once the access cover has been removed, please take care to avoid damaging any of the parts now accessible. SAFETY ISOLATING TRANSFORMER (SIT) IS REQUIRED

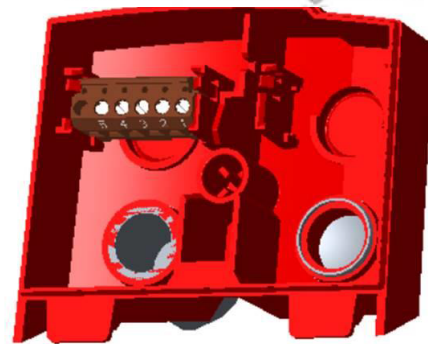


Fig. 7. Access cover

Depending upon the model, the access cover may have one or two terminal strips, including a layout with a description for each of the terminals.

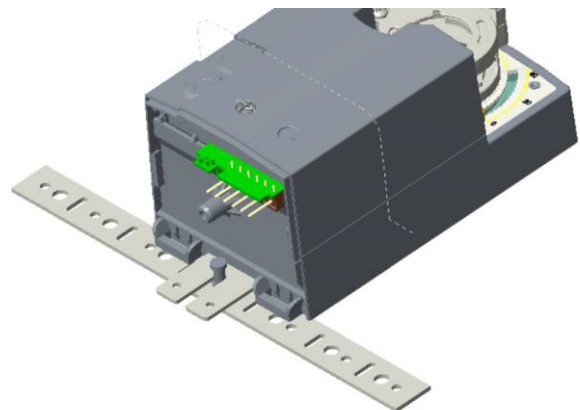


Fig. 8. Actuator with access cover removed

Wiring diagrams

A1 CN6120,CN4620 CN6134,CN4634 FLOATING	A2 CN6120,CN4620 CN6134,CN4634 2-POS

Below 2 tables summarize the information presented in the preceding wiring diagrams.

Models	Terminal	Wiring	
		Floating	2-position
CN6120,CN6134 supply and signal lines (must be equipped with spark suppressors)	2	common \perp / -	common \perp / -
	3	24V ~/+ (clockwise)	24V ~/+
	4	24V ~/+ (counterclockwise)	24V ~/+ control signal
CN4620,CN4634 supply and signal lines (must be equipped with spark suppressors)	2	common \perp / -	common \perp / -
	3	230Vac (clockwise)	230Vac
	4	230Vac (counterclockwise)	230Vac control signal

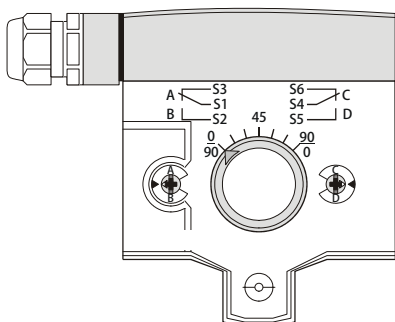
Wiring requirements: 20~16AWG, Cu, Str/Sol with Torque 4.5 Lb-In

OPTIONAL ACCESSORIES

The following optional accessories can be ordered separately.

Auxiliary Switch Kit

Order no.: SW2



The auxiliary switches are field-installable parts providing two SPDT freely-adjustable switches.

SPARE PARTS

Spare Parts Kit

Order no.: A7209.2071

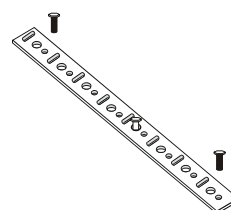
The spare parts kit contains the following items:

- Anti-rotation bracket and screws
- Access cover screw
- Plastic protective cap for protection standard IP54
- Mechanical end limit screw and retainer

Anti-Rotation Bracket Kit

Order no.: A7209.2073

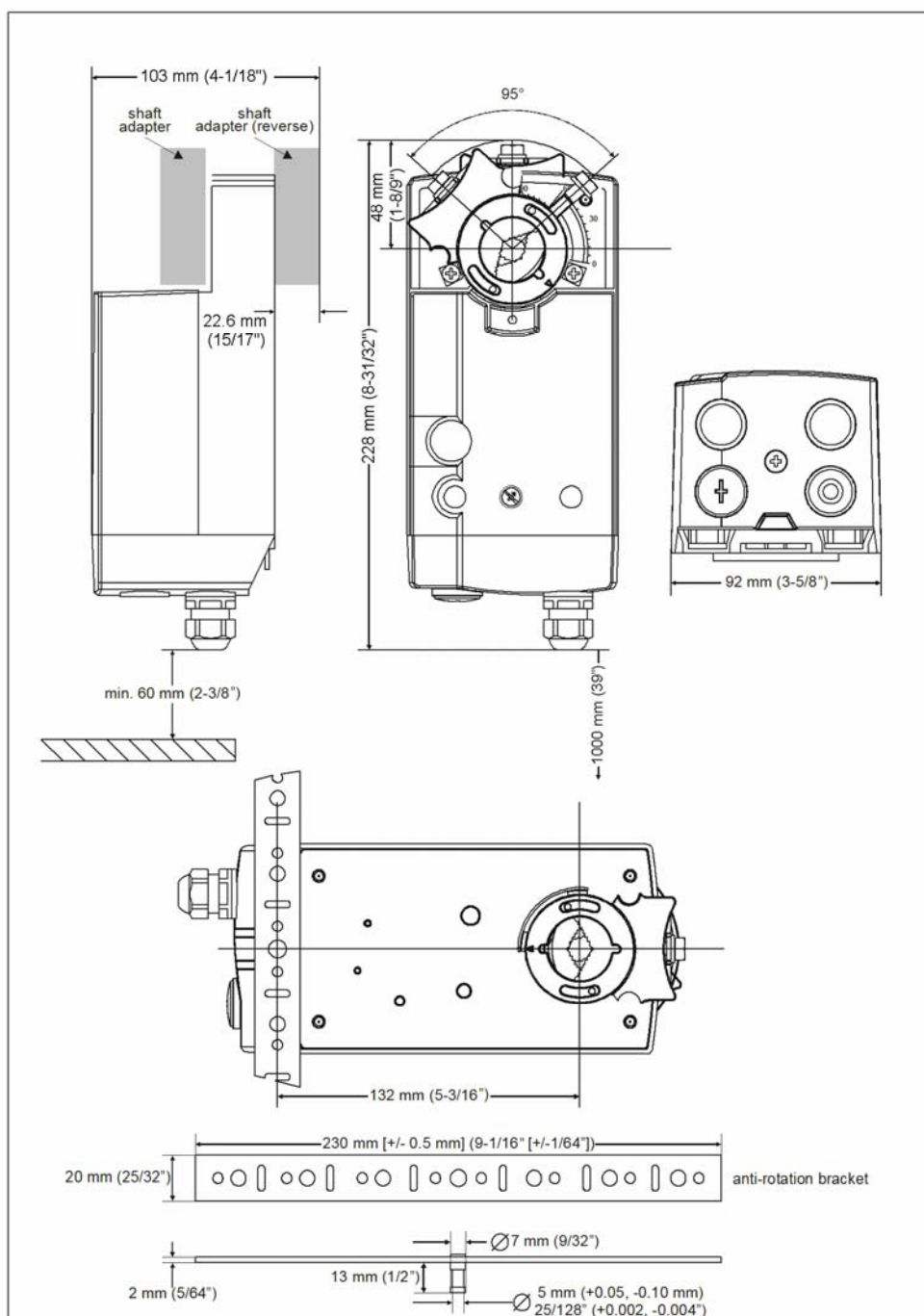
The anti-rotation bracket kit can be ordered separately.



Contains:

- 10 anti-rotation brackets
- 20 screws

DIMENSIONS



Honeywell

Automation and Control Solutions

Honeywell ECC. (Tianjin) Co., Ltd.
158 NanHai Road, TEDA
Tianjin, 300457, P.R.C.

Subject to change without prior notice

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